

## **RTCA SC-186 CDTI Subgroup**

### **September 8, 2005    CDTI subgroup telecon summary**

Taji Shafaat - Boeing  
Tom Eich - ACSS  
Roxaneh Chamlou – MITRE  
Sethu Rathinam – Rockwell Collins  
Michael Petri – FAA  
Ken Carpenter – QinetiQ  
John Helleberg – MITRE  
Bob Manning – L-3 Communications

#### **1. TCAS symbol shift action item (see file TCAS vs ADS.doc)**

Previously, the issue of symbol shifting on the display has been discussed. The issue deals with changing from using “best” data to “TCAS” data as the source for displayed position during a TCAS RA. John Morgan of Honeywell did an analysis, based on a 6.5” display size and TCAS symbol size of 0.2” square, and determined that a shift of about one symbol width

The RA times used in the assumption are high. Maximum nominal TCAS RA time is actually 20 to 35 seconds, depending on sensitivity level. As such, some re-figuring of the results may be in order.

There was some confusion about the table results, and John will be consulted.

Taji was concerned that such a jump could cause either confusion or distrust in the system. He wondered what is to be gained from switching data sources. Ken agreed with this, and added that the general “wobble” of TCAS targets, compared to the steady (?) ADS-B data, and wondered if that would concern the flight crew.

Roxaneh noted that TCAS/ADS-B as display source isn’t a technical issue. The ASSAP group is working on developing the architecture to use the best source data, as they have been running into problems with “fusing” the data. The ASSAP would then just indicate whether the TCAS data was correlated with ADS-B or not. They are currently working on developing the algorithms and scenarios. Sethu asked for an update on this as additional information becomes available.

Sethu suggested running some pilots through a simulator, and asking them these questions.

- 1 - Is a shift of one symbol width really an issue at the start and end of an RA.
- 2 – If they are told about this in training, would that be sufficient mitigation.

John Helleberg took the action to conduct experiments using symbol shift and get input from pilots. There are also concerns about shifts between TIS-B and ADS-B data, which could occur at any time. Roxaneh notes that these should be only in pathological cases. She is planning to attend the September CDTI meeting.

This issue will be discussed at the meeting.

2. ASSAP coordination items - update (update of what has been agreed to with ASSAP subgroup on the issues from last meeting)

Sethu discussed the coordination item list from the July meeting with Roxaneh. Many of them were determined to be CDTI-only issues. The document will be updated with the current understanding/agreement between the groups (there are still at high level and will need to be taken into account when the detailed MOPS material is drafted).

We would like to start discussing the format/organization of the MOPS document at the September meeting. How will it be organized with the three sub-systems? Sethu will ask Jonathan to join in that discussion.

3. Plan for September meeting. (20-22 Sept, at RTCA headquarters in Washington DC) The meeting will start at 9:00 AM on September 20<sup>th</sup>. We generally end by mid-afternoon on the last day.

4. Other, if any are raised at the telecon.

Taji reviewed a number of Boeing documents, and found them to be too specific for use in the CDTI group (for equipment installation requirements related to Applications). That action item will be closed. Taji will work on creating a list of issues related to equipment installation (and related to each application) for the CDTI group to discuss and generate requirements.

John Helleberg asked how ground vehicles would be handled on the display (question is coming from Capstone/Alaska). Will there be different symbols for firetrucks, etc. There are clutter issues with adding these targets. Taji opined that different symbols for each type of ground vehicle would be very difficult for a pilot to remember. It is suspected that a ground-only vehicle symbol might be used, and would need to be different from the aircraft-on-ground.

John will summarize the issues for the next meeting.